

- a. 7540 - COMPUTER TECHNOLOGY AND NETWORKS
 - b. 7540.01 - TECHNOLOGY PRIVACY
 - c. COMPUTER USAGE Modify
 - i. Policy for Acceptable Use of Computers and Other Technology
 - d. Parent Waiver Form for Non-Internet Use
 - e. 7540.03 - STUDENT NETWORK AND INTERNET ACCEPTABLE USE AND SAFETY
 - f. 7540.04 - STAFF NETWORK AND INTERNET ACCEPTABLE USE AND SAFETY
 - g. 7541 - ELECTRONIC DATA PROCESSING DISASTER RECOVERY PLAN
19. Appendix B: GLOSSARY
- a. DHCP (Dynamic Host Configuration Protocol)
 - b. IDF (Intermediate Distribution Frame)
 - c. IP Telephony
 - d. MDF (Main Distribution Frame)
 - e. SIF (School Interoperability Framework)
 - f. UPS (Uninterruptible Power Supply)
 - g. VOIP (Voice Over Internet Protocol)
-

Michigan Technical Academy Schools

School Mission Statement

The mission of the Michigan Technical Academy is to provide a nurturing, structured environment, where all students will be empowered through a well-rounded education, emphasizing academic excellence, social skills and moral character. We will provide a learning environment in which all students will be challenged to reach their potential as involved citizens and life-long learners and develop the academic, mechanical and life skills necessary to successfully compete in and contribute to the diverse global workplace with an emphasis on High School Automotive Technology.

School Profile

Michigan Technical Academy is known for its tradition of excellence in instructional programs and educational leadership. The 2008-2009 enrollment is 1121. Michigan Technical Academy operates 4 school buildings: 1 high school, 1 middle school, 1 grades 3-5 elementary and 1 grades PreK-2 elementary.

Total Student Enrollment	929
PreK-1	213
Grade 2-4	299
Grade 5-8	417
Instructional Staff	60
Administrators & Supervisors	
Superintendent & Asst. Superintendents	1
Directors, Managers, & Supervisors	6
Principals & Asst. Principals	4
Average Daily attendance	93%
Average Class Size	26
Professional Staff-to-Student ratio	15:1

School Buildings

• Michigan Technical Academy PreK-2 19900 Evergreen Detroit, MI 48219 313-538-4927	• Michigan Technical Academy 5-8 23750 Elmira Redford, MI 48239 313-537-9311
• Michigan Technical Academy 2-4 19940 Mansfield Detroit, MI 48235 313-272-1649	

Vision and Goals

Technology Planning Initiative Background

This technology plan will be used as a guide to integrate technology in a way that prepares today's students to be successful in tomorrow's world by promoting creative and critical thinking and establishing proficient communication skills.

School Technology Mission Statement

Our mission is to facilitate a learning environment in which technology is utilized to promote success. Technology is a tool to support the curriculum, to reinforce prior learning, to increase productivity, and to encourage creativity and problem solving. We will provide teachers with the skills and tools needed to integrate technology into the curriculum and provide continuous support to ensure that the technology is being used to its maximum potential in the classroom.

Instructional Technology Planning Team

Name	Position
Jeremy Gilliam	Superintendent
Toni Jackson	Board Member
Gerald Drouillard	Co-Chairperson Technology Consultant <u>Drouillard & Associates, Inc.</u>
Thomas Kozak	Co-Chairperson Data and Assessment Coordinator, Michigan Technical Academy
Sheree Brown	Teacher, Michigan Technical Academy 2-4
Jessica Shipman	Teacher, Michigan Technical Academy 5-8
Dana McKissic	Teacher Michigan Technical Academy 2-4
Amy Noe	Special Education

Goals

Curriculum

- Integrate updated technology standards and benchmarks into existing content standards and apply to established district curricular content.
- Demonstrate technology skills in curricular areas throughout a student's K-12 experience.
- Plan where State GLCEs and HSCEs are to be applied by grade level.
- Increase student achievement through technology integration.
- Utilize assessment software to measure student achievement in order to make data-driven decisions.
- Increase online methods of communication between students, teachers, and parents.

- Improve teachers and staff awareness of the importance of technology integration, including supplemental technology, to promote learning.

Professional Development

- Provide ongoing training and support necessary for teachers to use technology effectively in the classroom, and to integrate technology-enhanced methods into their teaching.

Infrastructure

- Maintain an up-to-date system that will be accessible to all teachers, staff, and students in order to provide a technology-rich learning environment.

Technical Support

- Support and assist teachers and staff to ensure that all hardware, software, and network resources can be utilized into the learning environment.

Monitoring and Evaluation

- Monitor and evaluate continuously to ensure that technology is being utilized in a way that best enhances teaching and learning

Our Grand Vision

Looking Into The Future

Michigan Technical Academy has struggled to provide our students with a technology-enriched learning environment and our students are now at a disadvantage in an ever-changing and competitive world. While the majority of this technology plan abides by the format presented by the State of Michigan's Department of Education, and represents realistic expectations based on the district's past technology experience and available resources, this section details the broad vision of Michigan Technical Academy relative to technology.

Classrooms

All classrooms will have adequate network drops and or hubs at locations where computers can be placed without violating local building codes.

Each classroom should have at overhead monitor/projector connection (including audio), and electrical outlets in order to accommodate a teacher's desk.

All classrooms will have either a ceiling mounted overhead projector, ceiling/wall mounted large monitor (36" minimum), or elmo connected to the teacher's computer. If a projector is used, a standardized location for a pull-down screen must be determined. The projector must be bright enough to be operated in a classroom with normal lighting remaining on.

Student computers will be placed on a counter that is specifically designated for student computer usage (as opposed to tables or carts). This will prevent the computers from having to be moved (and disconnected) for floor cleaning and maintenance, and allow for a more stable/secure environment. The computer counter will have a cable tray designed for concealed cable placement.

Where appropriate, smart boards should be used for presenting and capturing interactive lessons. Smart boards enable seamless links to be made between the technology and the subject material.

Interactive Response systems for student feedback will be utilized where appropriate. These systems (like CPS), allow teachers to receive immediate feedback from students in order to get an immediate measurement of student comprehension.

Handheld computers, web books, laptop and thin client technology will begin to be integrated into the curriculum. These devices can be used for data retrieval and analysis, report recording, viewing eBooks, peer editing (by students beaming each other their writing activities), concept mapping, etc. It is a cost efficient method of getting technology into the hands of all students.

All classroom computers should be arranged in a configuration that enables the teacher to view all computer screens from a central location.

Each classroom should also have:

- At least one networked printer.
- Document camera (such as an Elmo), monitor and/or projector.
- Adequate electricity for existing and future technology.
- Phone with access to voice-mail.

Specialized Technology Enriched Classrooms

Michigan Technical Academy has successfully implemented specialized technology-enriched classrooms in the past that drastically changes the teacher's method of instructional delivery. The district will continue to integrate these types of classrooms that are intended to deliver a highly interactive learning experience. Since there are several models of these classrooms available with varying levels of technology integration, the school will determine the type of room that best suites the desired level of interactive teaching and learning experience.

Staff Access To Computers

All staff will have access to computers. To accommodate this, all staff will have at least one computer with network access in their classroom. Itinerant teachers will have their own laptops or will use designated workstations if these teachers have their own office or workspace. At least one computer will be available in each media center exclusively for staff use.

Computer Labs

As computers become more common in the everyday life of students at school and at home, students become more dependent on the technology. It is the district's responsibility to provide the technology resources that accommodate and encourage the increasing technology proficiency of today's students.

Middle School

The Middle School currently has two computer applications labs used for computer-related courses in grades 5-8, one mobile lab, and one media center.

Michigan Technical Academy Middle School should have:

- 2 labs reserved for computer-related applications classes (each with 25 computers/one for the 5th grade wing and 1 for the 6th-8th grades)
- 1 media center (each with 21 computers)
- 1 Mobile Lab (each with 30 laptops)
- Each lab should have a smartboard, a scanner, video projector, document camera, and a color laser printer.
- Each lab should be equipped with independent workstations for each student. (Not 8 foot tables)

Elementary School

The district's past practice was to integrate a smaller sized lab into the media centers of each elementary building. Recently, some of our elementary buildings have branched off their labs into separate rooms away from the direct supervision of the media paraprofessionals, allowing the classroom teacher to work with the entire class on a project. For the most part this separation from the media centers has been very successful, although the elementary media centers do need to contain at least a smaller lab for student lessons.

Each Elementary School should have:

- 1 "open" lab (with 32 computers, a scanner, document camera, video projector, and a color laser printer)
- 1 Mobile Lab (with 30 laptops)

Video Streaming Technology

Michigan Technical Academy will integrate video streaming into the curriculum using three separate methods.

- Video streaming will be available to all buildings via an Internet-based service containing thousands of educational videos available on-demand, including the ability to sort and select by state-aligned standards.
- Distance Learning capabilities will be made available in order to provide video conferences, virtual field trips, and shared-learning classrooms.
- Video streaming servers will be installed district-wide (or building-wide) that will contain a library of approved, full-length videos available for broadcast to individual rooms or throughout an entire building.

Wireless Technology

The district will expand its use of wireless technology within each building to allow wireless accessibility in all classrooms, offices, and other areas where wireless connectivity would be beneficial. All fixed access points will transmit using encrypted security to prevent unauthorized access to the network. All portable-computing devices will have the capability of wireless connectivity to the school network.

Local Area Networks

Each building will have a central MDF housing the head-end equipment, with additional IDFs located where needed (determined by distance limitations to MDF and other strategic reasons). The LAN of each building will be capable of handling 10/100/1000. Ethernet, with 1000 Mbps (1 GB) being the preferred speed.

All network drops will be properly identified at both the MDF/IDF and drop location.

Secured wireless access points will be located throughout each campus to allow mobile technology devices to connect to the LAN, allowing for students and staff to have access to electronic resources in an environment most appropriate for learning, teaching, and overall productivity.

Internet Connectivity

Each school location will have at least 6Mbps/1Mbps download/upload capabilities to the internet. Redundant internet connections at each location will be used as the building needs require it for performance, bandwidth, and reliability.

Phone Systems

The district will move toward a modernized phone and voice mail system using VOIP (Voice Over Internet Protocol) technology. The phone system will include integrated voice-mail access for all teachers, administrators, and office staff. The phone system and voice-mail system will have the ability to be managed from a central location by the technology department.

Servers

Each building will house its own file, firewall, content filter, phone, thin client and application server. All servers will be able to be accessed and administered remotely from a central location by the district's technology staff in order to provide efficient support and maintenance. All users will have private folders on building servers specifically designated for secure storage of files. Users should store all important files on file servers (which are backed up nightly), as opposed to local hard drives in order to prevent the loss of files due to hard drive failure.

All servers will have a working backup system that is tested on a regular basis to ensure proper restoration if required. The district will establish a remote backup system once the upgrade to the fiber is completed.

All servers and supporting equipment will be contained in a clean, secure, air-conditioned room, with adequate power surge protection.

All servers and network equipment will be connected to Uninterruptible Power Supplies (UPS) in order to keep all systems up and running as long as possible in case of a power failure.

Google Apps Education Edition

Michigan Technical Academy uses Google Apps Education Edition's free communication, collaboration, calendar and publishing tools.

With Google's free services, we can select any combination of available tools and services and customize them with our school's logo, color scheme and content. These services are hosted by Google, so there's no hardware or software to download, install or maintain.

SCHOOL MANAGEMENT SYSTEM

The district's vision is to have a stable, user-friendly, and robust management system that administers student, financial, human resource, employee, and payroll functions that meet or exceed the academy's needs. The system may be a single software package or best-of-breed system that complies with SIF standards. The management system must be capable of creating on-demand reports by the end-user without needing assistance from administrative or technical staff.

Data analysis and benchmark assessment software should also be implemented in order to measure student achievement across the district and to allow the Department of Instruction to make data-driven decisions regarding the curriculum. The software should be capable of seamlessly integrating into our current or future system.

Currently MTA uses Skyward for our Student Information System (SIS). Skyward is accessible to all teachers, with designated access being granted depending on needs and security issues. Electronic grading and attendance is mandated at every grade level across the district. Grades, attendance, and other relevant information are available on-line for student, teacher, and administrative access. The academy will be evaluating the cost effectiveness of Skyward and possibly looking at alternatives.

Management software will also include the continued use of bus routing software by the transportation system, and a GIS (Geographical Information System) program to assist with student and other demographics within the district and surrounding area.

POINT OF SALE SYSTEM

The academy currently uses Skyward for its Point of Sale system in all cafeterias in every school building. If Skyward is replaced, the new system will need to have POS.

ONLINE ACCESSIBILITY BY STUDENTS, PARENTS, AND STAFF

Students, parents, and staff will have online access to public and private information via the Internet. Grades, attendance, report cards, class schedules, assignments, and other school-related information will be online and updated on a regular basis. Computers will be designated at each school building so that parents and students without home Internet connectivity are able to access the system as needed.

VIDEO SURVEILLANCE & BUILDING SECURITY SYSTEM

Michigan Technical Academy installed a new building security system, including a video surveillance system, at the K-2 location during the 2007-2008 school year. The district will expand this system to include all buildings as needed. The security system will include:

- Fixed-position cameras located at numerous strategic areas inside and outside each building.
- Pan, Tilt, and Zoom (PTZ) cameras mounted in areas where various viewing options are necessary.
- Digital Video Records (DVR's) located in each building's MDF that will record and store several days' worth of video from each camera, along with the ability to playback and export recorded video.

DISASTER RECOVERY

The academy currently has a disaster recovery plan that:

- All crucial data is backed up on a regular basis and offsite.
- Data can be quickly and reliably restored on a timely basis at any time.
- Vital operations will be disrupted as briefly as possible.
- The entire system can resume normal operation as soon as possible.

Since data backups are the most crucial component of disaster recovery, the academy maintains redundant methods of backups for servers, both locally and remotely. The technology services personnel is responsible for maintaining backup servers and/or storage devices that are located off-site from the server being backed up. This will assure that if an entire building (or area of a building) is destroyed containing a server and local backups, the data on that server can be retrieved from the remote location.

Curriculum Integration

This section discusses the Goals and strategies, aligned with challenging State GLCEs and HSCEs, for using telecommunications and technology to improve teaching and learning.

As stated in our mission statement, technology is a tool to support the curriculum, to reinforce prior learning, to increase productivity, and to encourage creativity and problem solving.

Technology Curriculum Goals

- Technology standards and benchmarks are to be integrated into existing GLCEs and HSCEs and applied to established district curricular content.
- Technology skills need to be demonstrated in curricular areas throughout the K-12 experience of all students.
- Grade level teachers will apply technology standards and benchmarks.
- Technology integration will result in increased achievement for all students.
- Utilize assessment software to measure student achievement in order to make data-driven decisions.
- Increase online methods of communication between students, teachers, and parents.
- Teachers and staff will become aware of the importance of technology integration, including supplemental technology, to promote learning.

Curriculum - Student Achievement

Strategies that are based on research and that integrate technology into curricula and instruction for purposes of improving student academic achievement and a timeline for this integration.

- Grade level teachers will be provided with the appropriate training and resources to incorporate technology standards into the curriculum.
- Gradual inclusion of technology integration will take place with the target implementation date of the 2012-2013 school year.

- Increased student achievement will be obtained with the development of problem solving strategies that incorporate higher order thinking skills.
- Student achievement will be monitored through the use of common assessments (report cards and district benchmark assessments), standardized test scores (MEAP), and Average Yearly Progress. (AYP)
- The following timeline will be used to incorporate technology standards into the student's K-12 educational experience:

Timeline for Technology Integration in Curricula and Instruction

To be used as developmentally appropriate

The district will adhere to the Michigan Education Technology Standards (METS) for integrating technology into the curriculum.

Early Elementary K-Grade 1

BASIC OPERATIONS AND CONCEPTS

By the end of Grade 2 each student will:

- Understand that people use many types of technologies in their daily lives (e.g., computers, cameras, audio/video players, phones, televisions)
- Identify common uses of technology found in daily life
- Recognize, name, and will be able to label the major hardware components in a computer system (e.g., computer, monitor, keyboard, mouse, and printer)
- Identify the functions of the major hardware components in a computer system
- Discuss the basic care of computer hardware and various media types (e.g., diskettes, CDs, DVDs, videotapes)
- Use various age-appropriate technologies for gathering information (e.g., dictionaries, encyclopedias, audio/video players, phones, web resources)
- Use a variety of age-appropriate technologies for sharing information (e.g., drawing a picture, writing a story)
- Recognize the functions of basic file menu commands (e.g., new, open, close, save, print)
- Proofread and edit their writing using appropriate resources including dictionaries and a class developed checklist both individually and as a group

SOCIAL, ETHICAL, AND HUMAN ISSUES

By the end of Grade 2 each student will:

- Identify common uses of information and communication technologies
- Discuss advantages and disadvantages of using technology
- Recognize that using a password helps protect the privacy of information
- Discuss scenarios describing acceptable and unacceptable uses of age-appropriate technology (e.g., computers, phones, 911, internet, email) at home or at school
- Discuss the consequences of irresponsible uses of technology resources at home or at school
- Understand that technology is a tool to help complete a task
- Understand that technology is a source of information, learning, and entertainment
- Identify places in the community where one can access technology

TECHNOLOGY PRODUCTIVITY TOOLS

By the end of Grade 2 each student will:

- Know how to use a variety of productivity software (e.g., word processors, drawing tools, presentation software) to convey ideas and illustrate concepts
- Be able to recognize the best type of productivity software to use for certain age-appropriate tasks (e.g., word processing, drawing, web browsing)
- Be aware of how to work with others when using technology tools (e.g., word processors, drawing tools, presentation software) to convey ideas or illustrate simple concepts relating to a specified project

TECHNOLOGY COMMUNICATIONS TOOLS

By the end of Grade 2 each student will:

- Identify procedures for safely using basic telecommunication tools (e.g., e-mail, phones) with assistance from teachers, parents, or student partners
- Know how to use age-appropriate media (e.g., presentation software, newsletters, word processors) to communicate ideas to classmates, families, and others
- Know how to select media formats (e.g., text, graphics, photos, video), with assistance from teachers, parents, or student partners, to communicate and share ideas with classmates, families, and others

TECHNOLOGY RESEARCH TOOLS

By the end of Grade 2 each student will:

- Know how to recognize the Web browser and associate it with accessing resources on the internet
- Use a variety of technology resources (e.g., CD-ROMs, DVDs, search engines, websites) to locate or collect information relating to a specific curricular topic with assistance from teachers, parents, or student partners
- Interpret simple information from existing age-appropriate electronic databases (e.g., dictionaries, encyclopedias, spreadsheets) with assistance from teachers, parents, or student partners
- Provide a rationale for choosing one type of technology over another for completing a specific task

TECHNOLOGY PROBLEM-SOLVING AND DECISION-MAKING TOOLS

By the end of Grade 2 each student will:

- Discuss how to use technology resources (e.g., dictionaries, encyclopedias, search engines, websites) to solve age-appropriate problems
- Identify ways that technology has been used to address real-world problems (personal or community)

Upper Elementary Grade 2 – 4

BASIC OPERATIONS AND CONCEPTS

By the end of Grade 4 each student will:

- Discuss ways technology has changed life at school and at home
- Discuss ways technology has changed business and government over the years
- Recognize and discuss the need for security applications (e.g., virus detection, spam defense, popup blockers, firewalls) to help protect information and to keep the system functioning properly
- Know how to use basic input/output devices and other peripherals (e.g., scanners, digital cameras, video projectors)
- Know proper keyboarding positions and touch-typing techniques
- Manage and maintain files on a hard drive or the network
- Demonstrate proper care in the use of hardware, software, peripherals, and storage media
- Know how to exchange files with other students using technology (e.g., e-mail attachments, network file sharing, diskettes, flash drives)
- Identify which types of software can be used most effectively for different types of data, for different information needs, or for conveying results to different audiences
- Identify search strategies for locating needed information on the internet
- Proofread and edit writing using appropriate resources (e.g., dictionary, spell check, grammar check, grammar references, writing references) and grade level appropriate checklists both individually and in groups

SOCIAL, ETHICAL, AND HUMAN ISSUES

By the end of Grade 4 each student will:

- Identify cultural and societal issues relating to technology
- Discuss how information and communication technology supports collaboration, productivity, and lifelong learning
- Discuss how various assistive technologies can benefit individuals with disabilities
- Discuss the accuracy, relevance, appropriateness, and bias of electronic information sources
- Discuss scenarios describing acceptable and unacceptable uses of technology (e.g., computers, digital cameras, cell-phones, PDAs, wireless connectivity) and describe consequences of inappropriate use
- Discuss basic issues regarding appropriate and inappropriate uses of technology (e.g., copyright, privacy, file sharing, spam, viruses, plagiarism) and related laws
- Use age-appropriate citing of sources for electronic reports
- Identify appropriate kinds of information that should be shared in public chat rooms
- Identify safety precautions that should be taken while on-line
- Explore various technology resources that could assist in pursuing personal goals
- Identify technology resources and describe how those resources improve the ability to communicate, increase productivity, or help achieve personal goals

TECHNOLOGY PRODUCTIVITY TOOLS

By the end of Grade 4 each student will:

- Know how to use menu options in applications to print, format, add multimedia features; open, save, manage files; and use various grammar tools (e.g., dictionary, thesaurus, spell-checker)
- Know how to insert various objects (e.g., photos, graphics, sound, video) into word processing documents, presentations, or web documents
- Use a variety of technology tools and applications to promote creativity
- Understand that existing (and future) technologies are the result of human creativity
- Collaborate with classmates using a variety of technology tools to plan, organize, and create a group project

TECHNOLOGY COMMUNICATIONS TOOLS

By the end of Grade 4 each student will:

- Use basic telecommunication tools (e.g., e-mail, WebQuests, IM, blogs, chat rooms, web conferencing) for collaborative projects with other students
- Use a variety of media and formats to create and edit products (e.g., presentations, newsletters, brochures, web pages) to communicate information and ideas to various audiences
- Identify how different forms of media and formats may be used to share similar information, depending on the intended audience (e.g., presentations for classmates, newsletters for parents)

TECHNOLOGY RESEARCH TOOLS

By the end of Grade 4 each student will:

- Use Web search engines and built-in search functions of other various resources to locate information
- Describe basic guidelines for determining the validity of information accessed from various sources (e.g., web site, dictionary, on-line newspaper, CD-ROM)
- Know how to independently use existing databases (e.g., library catalogs, electronic dictionaries, encyclopedias) to locate, sort, and interpret information on an assigned topic
- Perform simple queries on existing databases and report results on an assigned topic
- Identify appropriate technology tools and resources by evaluating the accuracy, appropriateness, and bias of the resource
- Compare and contrast the functions and capabilities of the word processor, database, and spreadsheet for gathering data, processing data, performing calculations, and reporting results

TECHNOLOGY PROBLEM-SOLVING AND DECISION-MAKING TOOLS

By the end of Grade 4 each student will:

- Use technology resources to access information that can assist in making informed decisions about everyday matters (e.g., which movie to see, which product to purchase)
- Use information and communication technology tools (e.g., calculators, probes, videos, DVDs, educational software) to collect, organize, and evaluate information to assist with solving real-life problems (personal or community)

Middle School Grade 5-8

The keyboarding class currently offered in 5th grade will become mandated for that grade starting with the 2011-2012 school year.

An 8th grade computer applications course designed to encompass all 8th grade METS requirements will be introduced during the 2011-2012 school year and will be a required course for all students unless they pass a test meeting the 8th grade technology standards.

BASIC OPERATIONS AND CONCEPTS

By the end of Grade 8 each student will:

- Use proper keyboarding posture, finger positions, and touch-typing techniques to improve accuracy, speed, and general efficiency in operating a computer
- Use appropriate technology terminology
- Use a variety of technology tools (e.g., dictionary, thesaurus, grammar-checker, calculator) to maximize the accuracy of technology-produced products
- Understand that new technology tools can be developed to do what could not be done without the use of technology
- Describe strategies for identifying and preventing routine hardware and software problems that may occur during everyday technology use
- Identify changes in hardware and software systems over time and discuss how these changes affected various groups (e.g., individual users, education, government, and businesses)
- Discuss common hardware and software difficulties and identify strategies for trouble-shooting and problem solving
- Identify characteristics that suggest that the computer system hardware or software might need to be upgraded
- Identify a variety of information storage devices (e.g., floppies, CDs, DVDs, flash drives, tapes) and provide a rationale for using a certain device for a specific purpose
- Identify technology resources that assist with various consumer-related activities (e.g., budgets, purchases, banking transactions, product descriptions)
- Identify appropriate file formats for a variety of applications
- Use basic utility programs or built-in application functions to convert file formats
- Proofread and edit writing using appropriate resources (e.g., dictionary, spell check, grammar check, grammar references, writing references) and grade level appropriate checklists both individually and in groups

SOCIAL, ETHICAL, AND HUMAN ISSUES

By the end of Grade 8 each student will:

- Understand the potential risks and dangers associated with on-line communications
- Identify security issues related to e-commerce
- Discuss issues related to acceptable and responsible use of technology (e.g., privacy, security, copyright, plagiarism, spam, viruses, file-sharing)
- Describe possible consequences and costs related to unethical use of information and communication technologies
- Discuss the societal impact of technology in the future
- Provide accurate citations when referencing information from outside sources in electronic reports
- Use technology to identify and explore various occupations or careers
- Discuss possible uses of technology (present and future) to support personal pursuits and lifelong learning
- Identify uses of technology to support communication with peers, family, or school personnel

TECHNOLOGY PRODUCTIVITY TOOLS

By the end of Grade 8 each student will:

- Apply common software features (e.g., thesaurus, formulas, charts, graphics, sounds) to enhance communication and to support creativity
- Use a variety of technology resources, including the internet, to increase learning and productivity
- Explore basic applications that promote creativity (e.g., graphics, presentation, photo-editing, programming, video-editing)
- Use available utilities for editing pictures, images, or charts
- Use collaborative tools to design, develop, and enhance materials, publications, or presentations

TECHNOLOGY COMMUNICATIONS TOOLS

By the end of Grade 8 each student will:

- Use a variety of telecommunication tools (e.g., e-mail, discussion groups, IM, chat rooms, blogs, video-conferences, web conferences) or other online resources to collaborate interactively with peers, experts, and other audiences
- Create a project (e.g., presentation, web page, newsletter, information brochure) using a variety of media and formats (e.g., graphs, charts, audio, graphics, video) to present content information to an audience

TECHNOLOGY RESEARCH TOOLS

By the end of Grade 8 each student will:

- Use a variety of Web search engines to locate information
- Evaluate information from various online resources for accuracy, bias, appropriateness, and comprehensiveness

- Identify types of internet sites based on their domain names (e.g., edu, com, org, gov, au)
- Know how to create and populate a database
- Perform queries on existing databases
- Know how to create and modify a simple database report
- Evaluate new technology tools and resources and determine the most appropriate tool to use for accomplishing a specific task

TECHNOLOGY PROBLEM-SOLVING AND DECISION-MAKING TOOLS

By the end of Grade 8 each student will:

- Use database or spreadsheet information to make predictions, develop strategies, and evaluate decisions to assist with solving a basic problem
- Describe the information and communication technology tools to use for collecting information from different sources, analyze findings, and draw conclusions for addressing real-world problems

Curriculum - Technology Delivery

Strategies for the delivery of specialized or rigorous courses and curricula through the use of technology, including distance learning technologies.

Michigan Technical Academy will employ alternative methods of instructional delivery through distance learning using various technologies (when/if available), including (but not limited to):

Data Director

Teachers will utilize the Data Director data warehousing software to assist in the monitoring of student academic growth through the use of common district-wide benchmark assessments, state standardized test scores (MEAP), and other progress monitoring assessments (DIBELS Next, DRA, EdPerformance, etc.).

GoKnow Mobile Learning Environment (MLE)

Utilizing a combination of Mobile Learning Devices (Netbooks) along with a comprehensive Mobile Learning Environment (MLE) platform from GoKnow, Inc., existing curriculum and novel new lessons created for mobile use will enhance the educational experience of the students by enabling a virtual classroom setting that allows for continual access to their coursework via WI-FI access with a 3G/4G cellular data plan for students and teachers.

Interactive Whiteboards

Teachers will utilize a Polyvision interactive whiteboard to enhance instruction through the use of hands-on applications and increased student interaction with visual and tactile opportunities for lesson enhancement.

Kent County Collaborative Core Curriculum (KC4)

Teachers will utilize the KC4 curriculum resource to support instruction. Training and support will be provided on an ongoing basis.

Michigan eLibrary (MEL)

The Michigan eLibrary is a project of the Library of Michigan, giving access to several databases to the citizens of Michigan through their libraries. Home access is available for some of these databases. These databases include: OCLS FirstSearch; Galegroup Infotrac; SIRS Discoverer Deluxe; Electric Library Elementary.

Video-Streaming

Where sufficient network bandwidth allows, video-streaming resources such as United Streaming will be used to enhance existing curricular areas at all grade levels. The "play now" or "download and play later" service enables students continual access to course video and documentaries both in school or at home for review and skill reinforcement.

Virtual Field Trips

Individual classrooms will utilize opportunities to explore educational topics electronically. Virtual field trips will be created in which students visit a variety of websites that relate to the current topic being studied.

Curriculum - Parental Communications & Community Relations

This section is used to describe strategies to promote parental involvement and to increase communication with parents and community, including a description of how parents and community will be informed of the technology to be used with students.

Michigan Technical Academy will increase communication with parents and the community by continuing existing methods of communication and implementing new projects, including:

- Expanding the use of Skyward (or equivalent service), a secure online information system that allows parents and students access to student grades, attendance, homework, and other relative data. Skyward is an excellent way for teachers to keep parents informed on a daily basis.
- Updating the district web page to include curriculum maps reflecting technology standards that are embedded in existing curriculum.
- Adding Voice Mail systems to buildings that do not currently have the equipment.
- Continuing to maintain our current e-mail system for teachers, administrators, and other instructional staff in order to provide effective communication between staff, parents, and community members.
- Reporting progress annually to the school board on the meeting of goals and objectives.
- Continuing to include parents and community members in district-level and building-level technology committees.

- Providing on-line access to the district's technology plan.
- Communication of current technology objectives to Parent Teacher Organization (PTO) to foster collaborative efforts to inform our parental constituents of the district's technology goals and objectives.
- Utilization of the yearly open house to inform stakeholders as to the technology objectives for the current school year.

Curriculum - Collaboration

The district currently does not provide adult literacy programs.

PROFESSIONAL DEVELOPMENT

Strategies for providing ongoing, sustained professional development for teachers, principals, administrators and school library media personnel to ensure that staff know how to use the new technologies to improve education or library services.

Goal: Provide ongoing training and support necessary for teachers to use technology effectively in the classroom and for administrators and staff to use technology effectively in day-to-day operations.

Introduction

Since Michigan Technical Academy is in the bottom quarter of Michigan school districts in general fund revenues per pupil, our district has not been able to allocate much money toward professional development, especially in the field of technology. We have been forced to be creative in our training methods, although most people in the district would agree that there are not enough opportunities.

Levels of Proficiency

Before training can be effective, the level of staff technological expertise must be identified. To apply the appropriate professional development, the district has divided staff skill levels into four different levels of proficiency: Beginning, Intermediate, Proficient, and Mentor. Instructional staff will determine their own level of competency by completing an on-line self-assessment form once per year.

Beginning

A staff member in the Beginning Level has little or no experience in technology. Training for this level will include:

- Operating Systems
- Word Processing
- Spreadsheets
- Database
- Basic Presentation
- Hardware (Printers, Scanners, Digital Camera's, CD-Recorders)
- Classroom Management
- E-Mail Communication
- Instructional/Curriculum Software

Intermediate

At the Intermediate Level, employees are expanding their knowledge and confidence using technology. They should begin concentrating on how technology can be used to enhance learning and spend less time focusing on technology skills.

Training for Intermediate Level users should include:

- Desktop Publishing
- Visual Thinking Tools (Smartboard Technology)
- Advanced Presentation
- Web Page Development

- Internet in the Classroom (WebQuests)

Proficient

Someone who has reached Proficient Level has received all or most of the training offered by the district. Members at this level are very comfortable with the integration of technology into lesson plans without assistance. They are also able to multi-task with various applications at the same time, and customize various settings in applications. Training for users at the Proficient Level would include advanced and specialized instruction that concentrates on classroom integration of technology.

Mentor

A Mentor has enough skills and experience to effectively incorporate technology applications into the classroom, and is willing and motivated enough to share his/her knowledge with peers. Some mentors may not be experts in every field, but should be proficient enough to be able to assist peers in an area of specialty.

Standards

The district will keep up to date with state and national technology standards, and use these standards when addressing technology proficiency of teachers and other appropriate staff. These standards are currently made available on-line at <http://techplan.org>.

Methods

Mentors

Mentors play a vital role in the professional development process, providing both formal training sessions in their buildings, and on-the-spot training as requested by peers. Mentors allow the district to use the "train the trainer" approach of professional development, which has proven to be a very successful and resource-efficient method of training. The district will continue to identify and train prospective staff members to become mentors, and to expand the practice of peer mentoring.

In-Services

During the 2009-2010 school year, Michigan Technical Academy plans to have its first full-day in-service dedicated exclusively to technology training. The district plans to develop a MACUL-style in-service that allowed teachers to sign up for and attend a variety of technology training sessions.

Wayne RESA

Most of our staff development has been provided by our local ISD. The Wayne RESA currently employs an Instructional Technology Consultant and Instructional Technology Support Specialist who offer training in aligning technology with the curriculum. They provide full day in-services, after school training sessions, and "one-on-one" training during the school day.

From Michigan Technical Academy's Strategic Plan:

Related District Strategic Plan Objective: Implement training programs to facilitate full utilization of instructional resources for staff and students (technology, media, career prep.).

Strategic Plan Action Steps:

- Provide opportunities and incentives for staff to attend conferences, seminars, workshops, and to participate in virtual training.
- Devote a minimum of one in-service per year to utilization and integration of instructional resources.
- Offer enrichment mini-classes for staff, student, and community members before/after school and on weekends.
- Establish a district wide technical skills database for staff to share specific technical expertise.
- Develop a teacher-to-teacher training program throughout the district.

Professional Development Timeline

2011-2012:

- As new technologies (both hardware and software) emerge and are acquired/implemented, staff will be adequately trained in the use of the new technology.
- The district will continue to dedicate at least one in-service day to the integration of technology into the curriculum.
- Teachers and instructional staff members will continue to attend conferences and workshops sponsored by organizations such as but not limited to Wayne RESA.
- Teachers will receive more in-depth training in the use of the district's electronic grading and attendance software in order to take advantage of more advanced features.
- Teachers will acquire more training in the use of the Data Director data warehousing software in order to take advantage of more advanced reporting features.
- Teachers will acquire more training in the use of the GoKnow MLE at the middle school level to assist in its school wide implementation at the middle school level.
- Faculty will be trained and encouraged to expand their use of Skyward (or equivalent service) and Google Apps in order to enhance communication with students and parents.
- The District will continue to identify and train additional mentors who can provide training in a more informal environment at convenient times for all staff members.

2012-2013:

- As new technologies (both hardware and software) emerge and are acquired/implemented, staff will be adequately trained in the use of the new technology.
- The district will continue to dedicate at least one in-service day to the integration of technology into the curriculum.
- The technology department will develop application-specific training sessions that can be offered at building-level in-services, or before or after school.
- Teachers and instructional staff members will continue to attend conferences and workshops sponsored by organizations such as but not limited to Wayne RESA.
- Teachers will receive in-depth training in the use of the district's electronic grading and attendance software especially pertaining to the integration of standards.
- Faculty will continue to be trained and encouraged to expand their use of Skyward (or equivalent service) and Google Apps in order to enhance communication with students and parents.
- The District will continue to identify and train additional mentors who can provide training in a more informal environment at convenient times for all staff members.
- The Technology Department and Department of Instruction will work in conjunction to develop technology-specific training to media staff during monthly scheduled after-school meetings.
- The Technology Department will develop and publish a monthly electronic newsletter providing helpful news and information relating to the use of technology within the school system.

2013-2014:

- As new technologies (both hardware and software) emerge and are acquired/implemented, staff will be adequately trained in the use of the new technology.
 - The district will continue to dedicate at least one in-service day to the integration of technology into the curriculum.
 - Teachers and instructional staff members will continue to attend conferences and workshops sponsored by organizations such as but not limited to Wayne RESA.
 - The technology department will continue to develop and offer application-specific training sessions that can be available at building-level in-services, or before or after school.
 - Teachers will receive in-depth training in the use of the district's electronic grading and attendance software especially pertaining to the integration of standards.
 - Faculty will continue to be trained and encouraged to expand their use of Skyward (or equivalent service) and Google Apps in order to enhance communication with students and parents.
 - The District will continue to identify and train additional mentors who can provide training in a more informal environment at convenient times for all staff members.
 - The Technology Department and Department of Instruction will work in conjunction to develop technology-specific training to media staff during monthly scheduled after-school meetings.
 - The Technology Department will develop and provide on-line technical support documents available via the district Skyward and the district web site.
-

Professional Development - Supporting Resources

This section covers strategies and supporting resources such as services, software, other electronically delivered learning materials and print resources that will be acquired to ensure successful and effective uses of technology.

Resources in both Print and Web Format:

- Acceptable Use Policy
- Technical Support Procedures
- Application for E-Mail Account
- Application for Web Site Account/Folder
- District Technology Guidelines
- Administrative Regulations: Telecommunications
- Request for Off Site Use of Computer Equipment
- Process for Building-Level Technology Acquisition
- Minimum Standards for Technology Acquisition (New & Donated)

Resources in Web Format Only:

- District Informational Web Site
 - State of Michigan Department of Education Web Site
 - Software Research Sites
 - Compass Learning Software
 - Britannica Online
 - RESA ISD Check-out System
-

INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT AND SOFTWARE

This section outlines strategies to identify the need for telecommunication services, hardware, software and other services to improve education or library services, and strategies to determine interoperability among the components of technologies to be acquired.

Goal: The district will maintain an up-to-date system that will be accessible to all teachers, staff, and students in order to provide a technology-rich learning environment.

Introduction

Despite our lack of technology funding, the district has been able to place at least one computer and network drop in every classroom (with Internet access), as well as provide at least 30 networked computers in each school computer lab: 3 labs in the high school, 1 computer lab at the middle school, 1 at the 3-5 building, and 1 lab at the K-2 building.

The K-1 lab was disassembled at the beginning of the 2009-10 school year to have the option for two student computer in each classroom. The K-2 staff has expressed a desire to have the computer lab back again.

Current Status

Local Area Networks

All school buildings are wired with Category 5e cable to provide an Ethernet topology to all needed areas. All buildings have at least one central switch that controls traffic out to local workgroups within the building. Workgroups, including media centers, labs, offices, and classrooms, have switches or hubs that connect back to the switch. All switches are 100 MB. Switches that have more than 8 computers connected to them downstream from the central switch(es) are being replaced with 1000/100/10 energy efficient switches.

Internet Access

MTA K-1 and the 2-4 have Internet access via cable modems from Comcast Business Services (ISP). These buildings have connections that are currently operating at 6/2 Mbps, which is roughly the capacity of 4 T1's.

MTA 5-8 connects via cable modem to the Internet with Brighthouse Networks as the ISP.

The district uses a true Internet content filter server with DansGuardian provided by Drouillard & Associates, Inc. at each location to filter Internet content on all devices on the network. The servers are Linux based and use Dansguardian to transparently filter all traffic. The district also adds specific URLs to OpenDNS.com DNS services in order to block the site throughout all buildings where required.

During the course of this plan, MTA will explore additional Internet Access options to increase the Internet Access bandwidth to meet the growing needs of the district.

Computer Standards

The district is currently replacing broken computers with Linux thin clients. Almost all the teacher computers in K-8 are now thin clients. The computer labs in each of the grade schools is a mixture of Linux and Windows XP.

The 5th grade computer lab is completely made with new Linux thin client hardware/software.

Servers

File Servers

The district has a Linux all-in-one server in each building (4 servers total). The servers are all open architecture PCs. In the high schools, students have their own personal folders that are used to save and retrieve school projects. All buildings use a "Share" folder on their servers, which is a full-access folder that can be accessed by anyone, anywhere in the building. Teachers and staff also have their own private folders on the server. The Linux servers are also used to launch applications directly from the server.

Web Server

Currently MTA uses Google Apps Education Edition web hosting. The service hosts the district's main web page, as well as individual building and classroom pages. We believe that Teachers will increasingly be using their classroom sites to post assignments and display student work. We have started the process of posting curriculum maps, course outlines, various forms, and other important documents on our web page for easy access by teachers and administrators. The web site should be redesigned to give it a more modern interface and rank better in search engines and make the interface more intuitive for staff, parents and students.

E-Mail Server

The district currently uses Google Apps as it's e-mail and collaboration system, which was implemented district-wide at the beginning of the 2007 school year. Google Apps is used for internal and external e-mail, private and shared calendars, and document sharing across the district.

Printers

Most classroom computers have laser or multifunction inkjet printers, scanners. Labs and large workgroups contain printers networked via built-in or external print servers. Smaller workgroups (classroom clusters) have printers networked using print sharing. The district does not have a standardized printer and each new printer is selected based upon use and current market pricing.

Air Conditioning

The 5-8 campus has central AC throughout the school with the server room having a supplemental AC unit.

Air conditioning at the K-4 school labs should be upgraded as the in-window AC units are inefficient.

Digital Cameras

All buildings have at least one digital camera. The district has standardized with Sony cameras for their built-in floppy drives and mini CD drives, but is currently investigating other brands and models. The cameras are used for student projects, including PowerPoint presentations, newsletters, and web pages. Digital video cameras are also being utilized for student projects, student announcements, and interactive yearbook CDs.

Scanners

There currently are not many scanners in all buildings. New teacher printers will probably be multifunction scanner and printers. The district would like to have at least one scanner installed on a classroom workstation. Scanners are used by staff and students to import existing images or text into documents. At least one scanner will need to be installed in each lab.

Overhead Video/Data Monitors & Projectors

All computer labs should have a video projector for easy viewing by students. While many of our classrooms are still without overhead monitors or projectors, we are adding more every year. The technology department is encouraging building leaders to install video projectors or large LCD monitors.

Software

The district has implemented and currently supports the following software packages:

Microsoft Office Professional

OpenOffice

Internet Explorer

Firefox

Google Apps

Study Island

Accelerated Reader

Windows XP/Vista

Ubuntu/Linux

Building Networks and Inventory

Grades 5-8

1 Linux Ubuntu Firewall, Content Filter, and File/Print Server.

1 Linux Ubuntu Thin Client Server for 5th grade Lab

1 Linux Cent-Os Sipx Phone Server with 60 Polycom Soundpoint 330 and 1 Polycom Soundpoint 650 IP phones

3 Microsoft Terminal Servers

1 Linux Ubuntu Video Security Server

30 Admin/Teacher Windows based PC's and laptops

45 RDP Thin Clients

30 Linux LTSP Clients

30 Student Windows based PC's

4 Workgroup printers

30 personal printers.